

TABLE 3 TO § 27.1507—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE STATIONS AND REPEATERS PERMITTED TO TRANSMIT WITH UP TO 800 WATTS/MEGAHERTZ—Continued

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts/megahertz)
Above 1067 (3500) To 1220 (4000)	60
Above 915 (3000) To 1067 (3500)	80
Above 763 (2500) To 915 (3000)	112
Above 610 (2000) To 763 (2500)	160
Above 458 (1500) To 610 (2000)	280
Above 305 (1000) To 458 (1500)	480
Up to 305 (1000)	800

TABLE 4 TO § 27.1507—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE STATIONS AND REPEATERS PERMITTED TO TRANSMIT WITH UP TO 2000 WATTS/MEGAHERTZ

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts/megahertz)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

§ 27.1508 Field strength limit.

The predicted or measured median field strength must not exceed 40 dBμV/m at any given point along the geographic license boundary, unless the affected licensee agrees to a different field strength. This value applies to both the initially offered service areas and to partitioned service areas.

§ 27.1509 Emission limits.

The power of any emission outside a licensee's frequency band(s) of oper-

ation shall be attenuated below the transmitter power (P) in watts by at least the following amounts:

(a) For 900 MHz broadband operations in 897.5–900.5 MHz band by at least $43 + 10 \log (P)$ dB.

(b) For 900 MHz broadband operations in the 936.5–939.5 MHz band, by at least $50 + 10 \log (P)$ dB.

(c) Compliance with the provisions of paragraphs (a) and (b) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the licensee's band, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(d) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

(e) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

§ 27.1510 Unacceptable interference to narrowband 900 MHz licensees from 900 MHz broadband licensees.

See 47 CFR 90.672.

PART 30—UPPER MICROWAVE FLEXIBLE USE SERVICE

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Subpart A—General

§ 30.1 Creation of upper microwave flexible use service, scope and authority.

As of December 14, 2016, Local Multipoint Distribution Service licenses for the 27.5–28.35 GHz band, and licenses issued in the 38.6–40 GHz band under part 101 of this chapter shall be reassigned to the Upper Microwave Flexible Use Service. Local Multipoint Distribution Service licenses in bands other than 27.5–28.35 GHz shall remain in that service and shall be governed

by the part 101 of this chapter applicable to that service.

§ 30.2 Definitions.

The following definitions apply to this part:

Authorized bandwidth. The maximum width of the band of frequencies permitted to be used by a station. This is normally considered to be the necessary or occupied bandwidth, whichever is greater. (See § 2.202 of this chapter).

Authorized frequency. The frequency, or frequency range, assigned to a station by the Commission and specified in the instrument of authorization.

Fixed satellite earth station. An earth station intended to be used at a specified fixed point.

Local Area Operations. Operations confined to physical facility boundaries, such as a factory.

Point-to-Multipoint Hub Station. A fixed point-to-multipoint radio station that provides one-way or two-way communication with fixed Point-to-Multipoint Service User Stations.

Point-to-Multipoint Service. A fixed point-to-multipoint radio service consisting of point-to-multipoint hub stations that communicate with fixed point-to-multipoint user stations.

Point-to-Multipoint User Station. A fixed radio station located at users' premises, lying within the coverage area of a Point-to-Multipoint Hub station, using a directional antenna to receive one-way communications from or providing two-way communications with a fixed Point-to-Multipoint Hub Station.

Point-to-point station. A station that transmits a highly directional signal from a fixed transmitter location to a fixed receive location.

Portable device. Transmitters designed to be used within 20 centimeters of the body of the user.

Prior coordination. A bilateral process conducted prior to filing applications which includes the distribution of the technical parameters of a proposed radio system to potentially affected parties for their evaluation and timely response.

Secondary operations. Radio communications which may not cause interference to operations authorized on a

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primary basis and which are not protected from interference from these primary operations

Transportable station. Transmitting equipment that is not intended to be used while in motion, but rather at stationary locations.

Universal Licensing System. The Universal Licensing System (ULS) is the consolidated database, application filing system, and processing system for all Wireless Radio Services. ULS supports electronic filing of all applications and related documents by applicants and licensees in the Wireless Radio Services, and provides public access to licensing information.

§ 30.3 Eligibility.

Any entity who meets the technical, financial, character, and citizenship qualifications that the Commission may require in accordance with such Act, other than those precluded by section 310 of the Communications Act of 1934, as amended, 47 U.S.C. 310, is eligible to hold a license under this part.

§ 30.4 Frequencies.

The following frequencies are available for assignment in the Upper Microwave Flexible Use Service:

(a) 24.25–24.45 GHz and 24.75–25.25 GHz bands—24.25–24.35 GHz; 24.35–24.45 GHz; 24.75–24.85 GHz; 24.85–24.95 GHz; 24.95–25.05 GHz; 25.05–25.15 GHz; and 25.15–25.25 GHz.

(b) [Reserved]

(c) 27.5 GHz—28.35 GHz band—27.5–27.925 GHz and 27.925–28.35 GHz.

(d) 38.6–40 GHz band:

(1) New channel plan:

Channel No.	Frequency band limits (MHz)
1	38,600–38,700
2	38,700–38,800
3	38,800–38,900
4	38,900–39,000
5	39,000–39,100
6	39,100–39,200
7	39,200–39,300
8	39,300–39,400
9	39,400–39,500
10	39,500–39,600
11	39,600–39,700
12	39,700–39,800
13	39,800–39,900
14	39,900–40,000

(2) Pending transition to the new channel plan, existing 39 GHz licensees licensed under part 101 of this chapter may continue operating on the following channel plan:

Channel group A		Channel group B	
Channel No.	Frequency band limits (MHz)	Channel No.	Frequency band limits (MHz)
1-A	38,600–38,650	1-B	39,300–39,350
2-A	38,650–38,700	2-B	39,350–39,400
3-A	38,700–38,750	3-B	39,400–39,450
4-A	38,750–38,800	4-B	39,450–39,500
5-A	38,800–38,850	5-B	39,500–39,550
6-A	38,850–38,900	6-B	39,550–39,600
7-A	38,900–38,950	7-B	39,600–39,650
8-A	38,950–39,000	8-B	39,650–39,700
9-A	39,000–39,050	9-B	39,700–39,750
10-A	39,050–39,100	10-B	39,750–39,800
11-A	39,100–39,150	11-B	39,800–39,850
12-A	39,150–39,200	12-B	39,850–39,900
13-A	39,200–39,250	13-B	39,900–39,950
14-A	39,250–39,300	14-B	39,950–40,000

(e) [Reserved]

(f) 37–38.6 GHz band: 37,600–37,700; 37,700–37,800 MHz; 37,800–37,900 MHz; 37,900–38,000 MHz; 38,000–38,100 MHz; 38,100–38,200 MHz; 38,200–38,300 MHz; 38,300–38,400 MHz; 38,400–38,500 MHz, and 38,500–38,600 MHz. The 37,000–37,600 MHz band segment shall be available on a

site-specific, coordinated shared basis with eligible Federal entities.

(g) 47.2–48.2 GHz band—47.2–47.3 GHz; 47.3–47.4 GHz; 47.4–47.5 GHz; 47.5–47.6 GHz; 47.6–47.7 GHz; 47.7–47.8 GHz; 47.8–47.9 GHz; 47.9–48.0 GHz; 48.0–48.1 GHz; and 48.1–48.2 GHz.

[81 FR 79937, Nov. 14, 2016, as amended at 83 FR 65, Jan. 2, 2018; 84 FR 1631, Feb. 5, 2019]

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§ 30.5 Service areas.

(a) Except as noted in paragraphs (b) and (c) of this section, and except for the shared 37–37.6 GHz band, the service areas for the Upper Microwave Flexible Use Service are Partial Economic Areas.

(b) For the 27.5–28.35 GHz band, the service areas shall be counties.

(c) Common Carrier Fixed Point-to-Point Microwave Stations licensed in the 38.6–40 GHz bands licensed with Rectangular Service Areas shall maintain their Rectangular Service Area as defined in their authorization. The frequencies associated with Rectangular Service Area authorizations that have expired, cancelled, or otherwise been recovered by the Commission will automatically revert to the applicable county licensee.

(d) In the 37.5–40 GHz band, Upper Microwave Flexible Use Service licensees shall not place facilities within the protection zone of Fixed-Satellite Service earth stations authorized pursuant to § 25.136 of this chapter, absent consent from the Fixed-Satellite Service earth station licensee.

§ 30.6 Permissible communications.

(a) A licensee in the frequency bands specified in § 30.4 may provide any services for which its frequency bands are allocated, as set forth in the non-Federal Government column of the Table of Frequency Allocations in § 2.106 of this chapter (column 5).

(b) Fixed-Satellite Service shall be provided in a manner consistent with part 25 of this chapter. The technical and operating rules in this part shall not apply to Fixed-Satellite Service operation.

[81 FR 79937, Nov. 14, 2016, as amended at 83 FR 65, Jan. 2, 2018]

§ 30.7 37–37.6 GHz Band—Shared coordinated service.

(a) The 37–37.6 GHz band will be available for site-based registrations on a coordinated basis with co-equal eligible Federal entities.

(b) Any non-Federal entity meeting the eligibility requirements of § 30.3 may operate equipment that complies with the technical rules of this part pursuant to a Shared Access License.

(c) Licensees in the 37–37.6 GHz band must register their individual base stations and access points prior to placing them in operation.

§ 30.8 [Reserved]

Subpart B—Applications and Licenses

§ 30.101 Initial authorizations.

Except with respect to in the 37–37.6 GHz band, an applicant must file a single application for an initial authorization for all markets won and frequency blocks desired. Initial authorizations shall be granted in accordance with § 30.4. Applications for individual sites are not required and will not be accepted, except where required for environmental assessments, in accordance with §§ 1.1301 through 1.1319 of this chapter.

§ 30.102 Transition of existing local multipoint distribution service and 39 GHz licenses.

Local Multipoint Distribution Service licenses in the 27.5–28.35 GHz band issued on a Basic Trading Area basis shall be disaggregated into county-based licenses and 39 GHz licenses issued on an Economic Area basis shall be disaggregated into Partial Economic Area-based licenses on December 14, 2016. For each county in the Basic Trading Area or Partial Economic Area in the Economic Area which is part of the original license, the licensee shall receive a separate license. If there is a co-channel Rectangular Service Area licensee within the service area of a 39 GHz Economic Area licensee, the disaggregated license shall not authorize operation with the service area of the Rectangular Service Area license.

§ 30.103 License term.

Initial authorizations will have a term not to exceed ten years from the date of initial issuance or renewal.

§ 30.104 Performance requirements.

(a) Upper Microwave Flexible Use Service licensees must make a buildout showing as part of their renewal applications. Licensees relying on mobile or point-to-multipoint service must show

that they are providing reliable signal coverage and service to at least 40 percent of the population within the service area of the licensee, and that they are using facilities to provide service in that area either to customers or for internal use. Licensees relying on point-to-point service must demonstrate that they have four links operating and providing service, either to customers or for internal use, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, a licensee relying on point-to-point service must demonstrate it has at least one link in operation and is providing service for each 67,000 population within the license area. In order to be eligible to be counted under the point-to-point build-out standard, a point-to-point link must operate with a transmit power greater than +43 dBm.

(b) In the alternative, a licensee may make its buildout showing on the basis of geographic area coverage. To satisfy the requirements of using this metric, licensees relying on mobile or point-to-multipoint service must show that they are providing reliable signal coverage and service to at least 25% of the geographic area of the license. The geographic area of the license shall be determined by the total land area of the county or counties covered by the license. Licensees relying on fixed point-to-point links or other, low-power point-to-point connections must show that they have deployed at least one transmitter or receiver in at least 25% of the census tracts within the license area. All equipment relied upon in the showing, whatever type of service or connection it provides, must be operational and providing service, either to customers or for internal use, as of the date of the filing.

(c) Showings that rely on a combination of multiple types of service will be evaluated on a case-by-case basis. Licensees may not combine population-based showings with geographic area-based showings.

(d) If a licensee in this service is also a Fixed-Satellite Service licensee and uses the spectrum covered under its UMFUS license in connection with a satellite earth station, it can dem-

onstrate compliance with the requirements of this section by demonstrating that the earth station in question is in service, operational, and using the spectrum associated with the license. This provision can only be used to demonstrate compliance for the county in which the earth station is located.

(e) Failure to meet this requirement will result in automatic cancellation of the license. In bands licensed on a Partial Economic Area basis, licensees will have the option of partitioning a license on a county basis in order to reduce the population or land area within the license area to a level where the licensee's buildout would meet one of the applicable performance metrics.

(f) Existing 24 GHz, 28 GHz and 39 GHz licensees shall be required to make a showing pursuant to this section by June 1, 2024.

[81 FR 79937, Nov. 14, 2016, as amended at 83 FR 65, Jan. 2, 2018; 83 FR 34492, July 20, 2018]

§ 30.105 Geographic partitioning and spectrum disaggregation.

(a) Parties seeking approval for partitioning and disaggregation shall request from the Commission an authorization for partial assignment of a license pursuant to §1.948 of this chapter. Upper Microwave Flexible Use Service licensees may apply to partition their licensed geographic service area or disaggregate their licensed spectrum at any time following the grant of their licenses.

(b) *Technical standards*—(1) *Partitioning*. In the case of partitioning, applicants and licensees must file FCC Form 603 pursuant to §1.948 of this chapter and list the partitioned service area on a schedule to the application. The geographic coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude and must be based upon the 1983 North American Datum (NAD83).

(2) Spectrum may be disaggregated in any amount.

(3) The Commission will consider requests for partial assignment of licenses that propose combinations of partitioning and disaggregation.

(4) For purposes of partitioning and disaggregation, part 30 systems must

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be designed so as not to exceed the signal level specified for the particular spectrum block in § 30.204 at the licensee's service area boundary, unless the affected adjacent service area licensees have agreed to a different signal level.

(c) *License term.* The license term for a partitioned license area and for disaggregated spectrum shall be the remainder of the original licensee's license term as provided for in § 30.103.

[81 FR 79937, Nov. 14, 2016, as amended at 82 FR 41548, Sept. 1, 2017]

Subpart C—Technical Standards

§ 30.201 Equipment authorization.

(a) Except as provided under paragraph (c) of this section, each transmitter utilized for operation under this part must be of a type that has been authorized by the Commission under its certification procedure.

(b) Any manufacturer of radio transmitting equipment to be used in these services may request equipment authorization following the procedures set forth in subpart J of part 2 of this chapter. Equipment authorization for an individual transmitter may be requested by an applicant for a station authorization by following the procedures set forth in part 2 of this chapter.

(c) Unless specified otherwise, transmitters for use under the provisions of subpart E of this part for fixed point-to-point microwave and point-to-multipoint services must be a type that has been verified for compliance.

§ 30.202 Power limits.

(a) For fixed and base stations operating in connection with mobile systems, the average power of the sum of all antenna elements is limited to an equivalent isotopically radiated power (EIRP) density of +75dBm/100 MHz. For channel bandwidths less than 100 megahertz the EIRP must be reduced proportionally and linearly based on the bandwidth relative to 100 megahertz.

(b) For mobile stations, the average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

(c) For transportable stations, as defined in § 30.2, the average power of the

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sum of all antenna elements is limited to a maximum EIRP of +55 dBm.

(d) For fixed point-to-point and point-to-multipoint limits see § 30.405.

§ 30.203 Emission limits.

(a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be –13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be –5 dBm/MHz or lower.

(b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.

(3) The measurements of emission power can be expressed in peak or average values.

(c) For fixed point-to-point and point-to-multipoint limits see § 30.404.

§ 30.204 Field strength limits.

(a) *Base/mobile operations:* The predicted or measured Power Flux Density (PFD) from any Base Station operating in the 27.5–28.35 GHz band, 37–38.6 GHz band, and 38.6–40 GHz bands at any location on the geographical border of a licensee's service area shall not exceed –76dBm/m²/MHz (measured at 1.5 meters above ground) unless the adjacent affected service area licensee(s) agree(s) to a different PFD.

(b) *Fixed point-to-point operations.* (1) Prior to operating a fixed point-to-point transmitting facility in the 27,500–28,350 MHz band where the facilities are located within 20 kilometers of the boundary of the licensees authorized market area, the licensee must complete frequency coordination in accordance with the procedures specified in § 101.103(d)(2) of this chapter with respect to neighboring licensees that may be affected by its operations.

(2) Prior to operating a fixed point-to-point transmitting facility in the

37,000–40,000 MHz band where the facilities are located within 16 kilometers of the boundary of the licensees authorized market area, the licensee must complete frequency coordination in accordance with the procedures specified in §101.103(d)(2) of this chapter with respect to neighboring licensees that may be affected by its operations.

§ 30.205 Federal coordination requirements.

(a) Licensees in the 37–38 GHz band located within the zones defined by the coordinates in the tables below must coordinate their operations with Federal Space Research Service (space to Earth) users of the band via the Na-

tional Telecommunications and Information Administration (NTIA). All licensees operating within the zone defined by the 60 dBm/100 MHz EIRP coordinates in the tables below must coordinate all operations. Licensees operating within the area between the zones defined by the 60 dBm and 75 dBm/100 MHz EIRP coordinates in the tables below must coordinate all operations if their base station EIRP is greater than 60 dBm/100 MHz or if their antenna height exceeds 100 meters above ground level. Licensees operating outside the zones defined by the 75 dBm/100 MHz EIRP coordinates in the tables below are not required to coordinate their operations with NTIA.

TABLE 1 TO PARAGRAPH (a): GOLDSTONE, CALIFORNIA COORDINATION ZONE

60 dBm/100 MHz EIRP		75 dBm/100 MHz EIRP	
Latitude/Longitude (decimal degrees)	Latitude/Longitude (decimal degrees)	Latitude/Longitude (decimal degrees)	Latitude/Longitude (decimal degrees)
34.69217/–115.6491	34.19524/–117.47963	34.69217/–115.6491	34.19524/–117.47963
35.25746/–115.32041	34.24586/–117.36210	35.25746/–115.32041	34.24586/–117.36210
36.21257/–117.06567	35.04648/–117.03781	36.11221/–116.63632	34.21748/–117.12812
36.55967/–117.63691	35.04788/–117.00949	36.54731/–117.48242	34.20370/–116.97024
36.66297/–118.31017	34.22940/–117.22327	36.73049/–118.33683	34.12196/–116.93109
36.06074/–118.38528	34.20370/–116.97024	36.39126/–118.47307	34.09498/–116.75473
35.47015/–118.39008	34.12196/–116.93109	36.36891/–118.47134	34.13603/–116.64002
35.40865/–118.34353	34.09498/–116.75473	35.47015/–118.39008	34.69217/–115.6591
35.35986/–117.24709	34.19642/–116.72901	35.40865/–118.34353	34.69217/–115.6491
35.29539/–117.21102	34.64906/–116.62741	35.32048/–117.26386	
34.67607/–118.55412	34.44404/–116.31486	34.63725/–118.96736	
34.61532/–118.36919	34.52736/–116.27845	34.55789/–118.36204	
34.91551/–117.70371	34.76685/–116.27930	34.51108/–118.15329	
34.81257/–117.65400	34.69217/–115.6591	34.39220/–118.28852	
34.37411/–118.18385	34.69217/–115.6491	34.38546/–118.27460	
34.33405/–117.94189		34.37524/–118.24191	
34.27249/–117.65445		34.37039/–118.22557	

TABLE 2 TO PARAGRAPH (a)—SOCORRO, NEW MEXICO COORDINATION ZONE

60 dBm/100 MHz EIRP		75 dBm/100 MHz EIRP
Latitude/longitude (decimal degrees)	Latitude/longitude (decimal degrees)	Latitude/longitude (decimal degrees)
34.83816/–107.66828	33.44401/–108.67876	33.10651/–108.19320
34.80070/–107.68759	33.57963/–107.79895	33.11780/–107.99980
34.56506/–107.70233	33.84552/–107.60207	33.13558/–107.85611
34.40826/–107.71489	33.85964/–107.51915	33.80383/–107.16520
34.31013/–107.88349	33.86479/–107.17223	33.94554/–107.15516
34.24067/–107.96059	33.94779/–107.15038	33.95665/–107.15480
34.10278/–108.23166	34.11122/–107.18132	34.08156/–107.18137
34.07442/–108.30646	34.15203/–107.39035	34.10646/–107.18938
34.01447/–108.31694	34.29643/–107.51071	35.24269/–107.67969
33.86740/–108.48706	34.83816/–107.66828	34.06647/–108.70438
33.81660/–108.51052		33.35946/–108.68902
33.67909/–108.58750		33.29430/–108.65004
33.50223/–108.65470		33.10651/–108.19320

TABLE 3 TO PARAGRAPH (a)—WHITE SANDS, NEW MEXICO COORDINATION ZONE

60 dBm/100 MHz EIRP		75 dBm/100 MHz EIRP	
Latitude/longitude (decimal degrees)	Latitude/longitude (decimal degrees)	Latitude/longitude (decimal degrees)	Latitude/longitude (decimal degrees)
33.98689/–107.15967	31.78455/–106.54058	31.7494/–106.49132	32.88382/–108.16588
33.91573/–107.46301	32.24710/–106.56114	32.24524/–106.56507	32.76255/–108.05679
33.73122/–107.73585	32.67731/–106.53681	32.67731/–106.53681	32.56863/–108.43999
33.37098/–107.84333	32.89856/–106.56882	32.89856/–106.56882	32.48991/–108.50032
33.25424/–107.86409	33.24323/–106.70094	33.04880/–106.62309	32.39142/–108.48959
33.19808/–107.89673	33.98689/–107.15967	33.21824/–106.68992	31.63664/–108.40480
33.02128/–107.87226		33.24347/–106.70165	31.63466/–108.20921
32.47747/–107.77963		34.00708/–107.08652	31.78374/–108.20798
32.31543/–108.16101		34.04967/–107.17524	31.78322/–106.52825
31.79429/–107.88616		33.83491/–107.85971	31.7494/–106.49132

(b) Licensees in the 37–38.6 GHz band located within the zones defined by the coordinates in the table below must coordinate their operations with the De-

partment of Defense via the National Telecommunications and Information Administration (NTIA).

TABLE 4 TO PARAGRAPH (b)—COORDINATION AREAS FOR FEDERAL TERRESTRIAL SYSTEMS

Location	Agency	Coordination area (decimal degrees)
China Lake, CA	Navy	50 kilometer radius centered on latitude 35.614781 and longitude –117.454309.
San Diego, CA	Navy	30 kilometer radius centered on latitude 32.68333 and longitude –117.23333.
Nanakuli, HI	Navy	30 kilometer radius centered on latitude 21.38333 and longitude –158.13333.
Fishers Island, NY	Navy	30 kilometer radius centered on latitude 41.25 and longitude –72.01666.
Saint Croix, VI	Navy	30 kilometer radius centered on latitude 17.74722 and longitude –64.88.
Fort Irwin, CA	Army	30 kilometer radius centered on latitude 35.26666 and longitude –116.68333.
Fort Carson, CO	Army	30 kilometer radius centered on latitude 38.71666 and longitude –104.65.
Fort Hood, TX	Army	30 kilometer radius centered on latitude 31.11666 and longitude –97.76666.
Fort Bliss, TX	Army	30 kilometer radius centered on latitude 31.8075 and longitude –106.42166.
Yuma Proving Ground, AZ	Army	30 kilometer radius centered on latitude 32.48333 and longitude –114.33333.
Fort Huachuca, AZ	Army	30 kilometer radius centered on latitude 31.55 and longitude –110.35.
White Sands Missile Range, NM	Army	30 kilometer radius centered on latitude 33.35 and longitude –106.3.
Edwards AFB, CA	Air Force	20 kilometer radius centered on latitude 34.922905 and longitude –117.891219.
Moody Air Force Base, GA	Air Force	30 kilometer radius centered on latitude 30.96694 and longitude –83.185.
Hurlburt Air Force Base, FL	Air Force	30 kilometer radius centered on latitude 30.42388 and longitude –86.70694.

(c) In addition to the locations listed in table 4 to paragraph (b) of this section, requests may be submitted to the Commission for access to the 37.6–38.6 GHz band for specific additional military bases and ranges for the purpose of defense applications or national security when the proposed military op-

erations cannot be accommodated in the 37–37.6 GHz band.

[81 FR 79937, Nov. 14, 2016, as amended at 84 FR 18405, May 1, 2019; 84 FR 20820, May 13, 2019]

§ 30.206 International coordination.

Operations in the 27.5–28.35 GHz, 37–38.6, and 38.6–40 GHz bands are subject

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to existing and future international agreements with Canada and Mexico.

§ 30.207 Radio frequency (RF) safety.

Licensees and manufacturers are subject to the radio frequency radiation exposure requirements specified in §§1.1307(b), 1.1310, 2.1091, and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements. Technical information showing the basis for this statement must be submitted to the Commission upon request.

§ 30.208 Operability.

Mobile and transportable stations that operate on any portion of frequencies within the 27.5–28.35 GHz or the 37–40 GHz bands must be capable of operating on all frequencies within those particular bands. Mobile and transportable stations that operate on any portion of either the 24.25–24.45 GHz or 24.75–25.25 GHz bands must be capable of operating on all frequencies within both of those bands.

[83 FR 34492, July 20, 2018]

§ 30.209 Duplexing.

Stations authorized under this rule part may employ frequency division duplexing, time division duplexing, or any other duplexing scheme, provided that they comply with the other technical and operational requirements specified in this part.

Subpart D—Competitive Bidding Procedures

§ 30.301 Upper Microwave Flexible Use Service subject to competitive bidding.

Mutually exclusive initial applications for Upper Microwave Flexible User Service licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

§ 30.302 Designated entities and bidding credits.

(a) *Eligibility for small business provisions.* (1) A small business is an entity that, together with its affiliates, its controlling interests and the affiliates of its controlling interests, have average gross revenues that are not more than \$55 million for the preceding three (3) years.

(2) A very small business is an entity that, together with its affiliates, its controlling interests and the affiliates of its controlling interests, has average gross revenues that are not more than \$20 million for the preceding three (3) years.

(b) *Bidding credits.* A winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses may use a bidding credit of 15 percent, as specified in §1.2110(f)(2)(i)(C) of this chapter. A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use a bidding credit of 25 percent, as specified in §1.2110(f)(2)(i)(B) of this chapter.

(c) A rural service provider, as defined in §1.2110(f)(4) of this chapter, who has not claimed a small business bidding credit may use a bidding credit of 15 percent bidding credit, as specified in §1.2110(f)(4)(i) of this chapter.

Subpart E—Special Provisions for Fixed Point-to-Point, Fixed Point-to-Multipoint Hub Stations, and Fixed Point-to-Multipoint User Stations

§ 30.401 Permissible service.

Stations authorized under this subpart may deploy stations used solely as fixed point-to-point stations, fixed point-to-multipoint hub stations, or fixed point-to-multipoint user stations, as defined in §30.2, subject to the technical and operational requirements specified in this subpart.

§ 30.402 Frequency tolerance.

The carrier frequency of each transmitter authorized under this subpart must be maintained within the following percentage of the reference frequency (unless otherwise specified in

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the instrument of station authorization the reference frequency will be deemed to be the assigned frequency):

Frequency (MHz)	Frequency tolerance (percent)
27,500 to 28,350	0.001
38,600 to 40,000	0.03

§ 30.403 Bandwidth.

(a) Stations under this subpart will be authorized any type of emission, method of modulation, and transmission characteristic, consistent with efficient use of the spectrum and good engineering practice.

(b) The maximum bandwidth authorized per frequency to stations under this subpart is set out in the table that follows.

Frequency band (MHz)	Maximum authorized bandwidth
27,500 to 28,350	850 MHz.
38,600 to 40,000	200 MHz. ¹

¹ For channel block assignments in the 38,600–40,000 MHz bands when adjacent channels are aggregated, equipment is permitted to operate over the full channel block aggregation without restriction.

§ 30.404 Emission limits.

(a) The mean power of emissions must be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) When using transmissions other than those employing digital modulation techniques:

(i) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 decibels;

(ii) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 decibels;

(iii) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log_{10}$ (mean output power in watts) decibels, or 80 decibels, whichever is the lesser attenuation.

(2) When using transmissions employing digital modulation techniques in situations not covered in this section:

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(i) In any 1 MHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 11 decibels:

$A = 11 + 0.4(P - 50) + 10 \log_{10} B$. (Attenuation greater than 56 decibels or to an absolute power of less than –13 dBm/1MHz is not required.)

(ii) In any 1 MHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log_{10}$ (the mean output power in watts) decibels, or 80 decibels, whichever is the lesser attenuation. The authorized bandwidth includes the nominal radio frequency bandwidth of an individual transmitter/modulator in block-assigned bands. Equipment licensed prior to April 1, 2005 shall only be required to meet this standard in any 4 kHz band.

(iii) The emission mask in paragraph (a)(2)(i) of this section applies only to the band edge of each block of spectrum, but not to subchannels established by licensees. The value of P in the equation is the percentage removed from the carrier frequency and assumes that the carrier frequency is the center of the actual bandwidth used. The emission mask can be satisfied by locating a carrier of the subchannel sufficiently far from the channel edges so that the emission levels of the mask are satisfied. The emission mask shall use a value B (bandwidth) of 40 MHz, for all cases even in the case where a narrower subchannel is used (for instance the actual bandwidth is 10 MHz) and the mean output power used in the calculation is the sum of the output power of a fully populated channel. For block assigned channels, the out-of-band emission limits apply only outside the assigned band of operation and not within the band.

(b) [Reserved]

§ 30.405 Transmitter power limitations.

On any authorized frequency, the average power delivered to an antenna in this service must be the minimum amount of power necessary to carry

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out the communications desired. Application of this principle includes, but is not to be limited to, requiring a licensee who replaces one or more of its antennas with larger antennas to reduce its antenna input power by an amount appropriate to compensate for the increased primary lobe gain of the replacement antenna(s). In no event shall the average equivalent isotropically radiated power (EIRP), as referenced to an isotropic radiator, exceed the following:

MAXIMUM ALLOWABLE EIRP

Frequency band (MHz)	Fixed (dBW)
27,500–28,350 ¹	+ 55
38,600–40,000	+ 55

¹For Point-to-multipoint user stations authorized in these bands, the EIRP shall not exceed 55 dBw or 42 dBw/MHz.

§ 30.406 Directional antennas.

(a) Unless otherwise authorized upon specific request by the applicant, each station authorized under the rules of this subpart must employ a directional antenna adjusted with the center of the major lobe of radiation in the horizontal plane directed toward the re-

ceiving station with which it communicates: *provided, however*, where a station communicates with more than one point, a multi- or omni-directional antenna may be authorized if necessary.

(b) Fixed stations (other than temporary fixed stations) must employ transmitting and receiving antennas (excluding second receiving antennas for operations such as space diversity) meeting the appropriate performance Standard A indicated in the table to this section, except that in areas not subject to frequency congestion, antennas meeting performance Standard B may be used. For frequencies with a Standard B1 and a Standard B2, in order to comply with Standard B an antenna must fully meet either Standard B1 or Standard B2. Licensees shall comply with the antenna standards table shown in this paragraph in the following manner:

(1) With either the maximum beamwidth to 3 dB points requirement or with the minimum antenna gain requirement; and

(2) With the minimum radiation suppression to angle requirement.

Frequency (MHz)	Category	Maximum beam- width to 3 dB points ¹ (included angle in degrees)	Minimum antenna gain (dbi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
38,600 to 40,000 ² ...	A	n/a	38	25	29	33	36	42	55	
	B	n/a	38	20	24	28	32	35	36	

¹ If a licensee chooses to show compliance using maximum beamwidth to 3 dB points, the beamwidth limit shall apply in both the azimuth and the elevation planes.

² Stations authorized to operate in the 38,600–40,000 MHz band may use antennas other than those meeting the Category A standard. However, the Commission may require the use of higher performance antennas where interference problems can be resolved by the use of such antennas.

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§ 30.407 Antenna polarization.

In the 27,500–28,350 MHz band, system operators are permitted to use any polarization within its service area, but only vertical and/or horizontal polarization for antennas located within 20 kilometers of the outermost edge of their service area.

PART 32—UNIFORM SYSTEM OF ACCOUNTS FOR TELECOMMUNICATIONS COMPANIES

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